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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,481	03/18/2004	Osamu Omori	9319S-000702	5518
27572	7590	07/12/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			STEIN, JAMES D	
			ART UNIT	PAPER NUMBER
			2874	
DATE MAILED: 07/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

-10/803,481

Applicant(s)

OMORI, OSAMU

Examiner

James D. Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0304.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art, [JP 2000-147346] to Masanobu and further in view of [USPAT 6,655,854] to Nguyen et al.

With regard to claims 1 and 8, Masanobu discloses a related optical module comprising a wiring substrate 25 including a wiring pattern formed thereon (¶0021-0022); an optical chip 27 including an electrode 27a that is electrically connected (¶0022) to the wiring pattern and an optical section. The optical section is considered by the Examiner to be the top portion of optical chip 27 on which the light is incident (see fig. 1); a base member 22 that holds a lens 21 (¶0016, page 4 lines 3-5) that focuses light on the optical section (fig. 1 and ¶0015), wherein a surface of the optical chip 27 having the electrode 27a is opposed to the wiring substrate 25 (see fig. 4D, the wiring substrate includes a light-transmissive section, passage hole 25a, at a location that overlaps the optical section (top surface of 27), and the base member 22 is affixed to the optical chip 27 through the wiring substrate 25 (see fig. 1 and ¶0015).

Therefore, Masanobu discloses the claimed invention except for the wiring substrate 25 to include a flexible substrate. Nguyen et al. disclose a related optical coupling module including a wiring substrate further comprising a flexible substrate 208. Nguyen et al. teaches

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such a feature to be advantageous in facilitating interconnection between a printed wiring substrate and a photonic device (such as optical device 27 of Masanobu), which is exactly the purpose of the invention disclosed by Masanobu. Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify optical module disclosed by Masanobu such that the wiring substrate 25 included a flexible substrate 208 in order to facilitate reliable interconnection between the printed wiring substrate and the optical device 27. The method of manufacturing an optical module of claim 8 is inherent to this disclosure.

With regard to claim 2, in addition to the rejection of claim 1 previously discussed above, because base member 22 is affixed to the wiring substrate 25 (see fig. 1, ¶0015), and wiring substrate 25 is affixed to the optical chip 27 via electrodes 27a (figs. 4a-e, ¶0022), the base member 22 is inherently affixed to the optical chip at a position of the electrode 27a and through the wiring substrate 25.

With regard to claim 3, in addition to the rejection of claim 2 previously discussed above, the connection between the electrode 27a and the wiring pattern 25 is sealed with anisotropic conductive [solder] paste adhesives (¶0022).

With regard to claim 4, in addition to the rejection of claim 1 previously discussed above, said light-transmissive section 25a is taught to be a passage hole (¶0015), which is analogous to an “opening section” as claimed by applicant.

With regard to claim 5, in addition to the rejection of claim 4 previously discussed above, fig. 4a shows a plurality of electrodes 27a included on the optical chip that are connected to the wiring pattern (via contacts 25b) in a region around the opening section 25a on the wiring

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substrate 25, and the base member 22 is provided to surround the opening section 25a (see figs. 1 and 4a-e).

With regard to claim 6, in addition to the rejection of claim 1 previously discussed above, the base member 22 is shown by fig. 1 to be adhered to the wiring substrate 25.

With regard to claim 7, no further structural limitations have been added to further limit parent claim 1. It is therefore rejected on the same basis as claim 1. Furthermore, the device as disclosed by Masanobu is also inherently an electronic device because chip 27 converts an optical signal into an electrical signal (§0017, line 6).

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu as applied to claim 8 above, and further in view of [USPUB 20040081385] to Karnacewicz et al, which discloses a related optoelectronic device. The claimed invention is inherent to the disclosure previously discussed above, except for the use of alignment marks to align the components of the optical module during assembly. In addition to marks (fiducials) being extremely well-known in the art to be used to align the components of electronic and optoelectronic modules, Karnacewicz et al. discloses the use of marks to align an active optical device and a wiring substrate during assembly (§0020). Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify the invention disclosed by Masanaobu-Nguyen previously discussed above such that the base member is aligned by recognizing a mark, and the mark is formed in a region of the optical chip which is exposed through the opening, wherein a mark is formed on the wiring substrate, a mark is a pattern formed in the same step in which the wiring pattern is formed in order to assemble the optical module with proper optical alignment.

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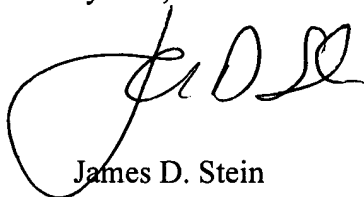
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: [USPUB 20010024553] to Nakanishi et al., which discloses a related optical module.

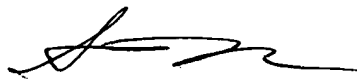
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



Sung Pak
Patent Examiner
AU 2874